

REMARKS

Claims 1, 3-5 and 7-15, 17-19, and 21-26 are pending. Claims 13-26 are withdrawn from consideration. Claim 1 has been amended. Claims 1, 3-5 and 7-15, 17-19, and 21-26 remain in the case.

Applicant respectfully requests that the foregoing amendments be made prior to further examination of the present application, and respectfully requests reconsideration of the present application in view of the foregoing amendments and the reasons that follow. This amendment adds, changes and/or deletes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, along with appropriate defined status identifiers.

Claims 1, 3-5 and 7-12 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The examiner urges that the claims use the word "absorbed" while the specification only provides support for "adsorbed." Applicants have amended claim 1 to change "absorb" to "adsorb," obviating the rejection.

Claims 1, 3-5, 8, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aida *et al.* (EP 405 982) in view of Funayama *et al.* (5,128,286) and Nishihara *et al.* (US 6,433,089), with dictionary.com used for evidentiary value. The examiner states that Aida *et al.* teach a thermoplastic resin which incorporates inorganic filler, flame retardant agent, glass fiber, and a cross linking agent in an amount of 0.01-7 parts per weight per 100 parts of the thermoplastic polymer composition, and that Aida *et al.* teach that the resin is cross linked by a heat treatment, and that the resin can be molded into various shapes. Funayama *et al.* is cited as teaching the specific cross linking agents of applicant's claims. The examiner admits that Aida *et al.* and Funayama *et al.* are silent regarding absorbing the cross linking agents onto an inorganic filler, and cites Nishihara *et al.* as teaching that "it is known in the art to impregnate non melting fillers with cross linking agents," citing column 7 lines 27-30. In this regard, the examiner points out that

impregnate and absorb have similar definitions as shown by dictionary.com entries, “specifically with regards to filling interstices with a substance.”

As highlighted by the examiner, there is a difference between absorption and adsorption. Appended to this response is an excerpt from The American Heritage Book of English Usage, which explains the difference between absorption and adsorption, namely:

Absorption indicates an active ongoing process in which something is taken up by something else by various physical actions: *The absorption of spilled juice into a paper towel occurs by capillary action.* *Adsorption*, in contrast, describes the holding or accumulation of something such as a gas, liquid or solute (a substance that has been dissolved in another substance), on the surface of a solid or liquid: *The removal of dissolved gases from tap water is achieved by their adsorption onto a substance such as activated charcoal.*

A second excerpt from McGraw-Hill Dictionary of Scientific and Technical Terms makes a similar distinction. That is, absorption refers to when atoms, molecules or ions enter some bulk phase. By contrast, adsorption refers to a surface rather than a volume.

The portion of Nishihara *et al.* cited by the examiner is column 7, lines 27-30, which is part of a longer paragraph. The portion cited by the examiner is in italics:

after the crosslinkable rubber (olefin rubber) (A) and the thermoplastic resin (olefin resin) (B) are added from a main feed portion together with a part of the crosslinking agent (C), the components (A), (B) and (C) are melt kneaded at the front part of the extruder to perform dynamic crosslinking, and then the remainder of the crosslinking agent (C) is added from the intermediate portion of the extruder, followed by melt kneading all the components to complete the dynamic crosslinking. Here, the larger number of division of the crosslinking agent (C) is preferred for inhibition of abrupt crosslinking, but even when the crosslinking agent (C) is divided into two parts and these are added separately (two-stage addition), appearance, fluidity, mechanical strength and quality stability can be markedly improved as compared with when the crosslinking agent (C) is added initially and all together (one-stage addition). For example, a part of the crosslinking agent (C) is added from the main feed portion and the remainder of (C) is divided and added separately from a plurality of side feed portions under melt kneading. For feeding the remainder of the crosslinking agent (C) in parts, (C) can be directly fed, but preferably (C) is fed in the form of a liquid feed by dissolving (C) in the softening agent (D). *Moreover, a*

non-melting filler is impregnated with the crosslinking agent (C) and this may be fed.

Thus, Nishihara *et al.* teaches that crosslinking agent should be subdivided and added at various stages, and that portions after the initial portion, the crosslinking agent desirably are in the form of a liquid feed, and may comprise a non-melting filler that is impregnated with the crosslinking agent. As highlighted by the examiner in the current Action, impregnating or absorbing is distinct from adsorbing.

The only portion of Nishihara *et al.* that uses the term adsorb is the last sentence of the above cited paragraph (column 7, lines 30-32), which states that:

If necessary, the crosslinkable rubber (A) may be divided and fed in parts. When the divided crosslinking agent (C) is adsorbed to or absorbed in the thus divided crosslinkable rubber (A), the crosslinking efficiency is further improved.

However, this sentence refers to the relationship between the ***crosslinkable rubber*** and the crosslinking agent, and not to the relationship between a ***filler*** and the crosslinking agent. With respect to the filler, Nishihara only discloses that the crosslinking agent may be *absorbed* in the filler, and *not adsorbed* on the surface of the filler. No *prima facie* case of obviousness exists with respect to claims that recite a crosslinking agent is previously absorbed on an inorganic filler.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aida *et al.* (EP 405 982) in view of Funayama *et al.* (US 5,128,286) and Nishihara *et al.* (US 6,433,089) as applied to claim 1 above and in further view of Marzocchi (3,888,645). Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aida *et al.* (EP 405 982) in view of Funayama *et al.* (US 5,128,286) and Nishihara *et al.* (US 6,433,089) as applied to claim 1 above and in further view Usuki *et al.* (US 4,889,885). Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aida *et al.* (EP 405 982) in view of Funayama *et al.* (US 5,128,286) and Nishihara *et al.* (US 6,433,089) as applied to claim 1 above and in further view Tanaka *et al.* (JP 11-180990). None of the additional references cited in these rejections overcome the failure of Nishihara *et al.* to suggest that a crosslinking agent

should be previously absorbed on an inorganic filler in a resin molded article as presently claimed.

If there are any problems with this response, or if the examiner believes that a telephone interview would advance the prosecution of the present application, Applicant's attorney would appreciate a telephone call. In view of the foregoing, it is believed none of the references, taken singly or in combination, disclose the claimed invention. Accordingly, this application is believed to be in condition for allowance, the notice of which is respectfully requested.

Respectfully submitted,

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The American Heritage® Book of English Usage.
A Practical and Authoritative Guide to Contemporary English. 1996.

4. Science Terms: Distinctions, Restrictions and Confusions

§2. absorption | adsorption

Absorption indicates an active ongoing process in which something is taken up by something else by various physical actions: *The absorption of spilled juice into a paper towel occurs by capillary action.* *Adsorption*, in contrast, describes the holding or accumulation of something such as a gas, liquid or solute (a substance that has been dissolved in another substance), on the surface of a solid or liquid: *The removal of dissolved gases from tap water is achieved by their adsorption onto a substance such as activated charcoal.*

McGraw-Hill Dictionary of Scientific and Technical Terms, 1st edition, 1st impression
(Published on March 20, 1979) (Publisher: Nikkan-Kogyo-Shinbun):

Impregnate [engineering]: to make liquid material invade into space in order to reforming of porous substance (page 258)

Adsorption [Chemistry]: to take some substance into another substance as it is. For example, to dissolve gas in liquid (page 302)

Absorption: a molecule, an atom or an ion of solid, liquid or gas is retained in a surface of solid or liquid. This is differed from absorption that substance is taken into solid or liquid (page 304)